

Partial characterization of antimicrobial compound produced by *Lactobacillus paracasei* LA07, a strain isolated from Budu.

ABSTRACT

Aim. The aim of this study was to identify the antimicrobial activity of the compound produced by the lactic acid bacterium, *Lactobacillus paracasei* LA07, isolated from the fish fermented product (budu). **Methods.** The activity of crude extract was assessed for its activity against different pathogenic bacteria, different enzymes and chemicals. **Results.** The inhibitory spectrum when evaluated against a range of Gram-positive and Gram-negative test microorganisms showed that the antimicrobial compound from the isolate inhibited the growth of the indicator microorganisms (*Bacillus cereus*, *Lactococcus lactis*, *Staphylococcus aureus*, *Salmonella enterica*, *Listeria monocytogenes* and *Escherichia coli*). Complete inactivation of antimicrobial activity from *Lb. paracasei* LA07 was observed for crude extract treated with proteinase K, confirming its proteinaceous nature. Inactivation of the antimicrobial activity was also observed with α -amylase treatment, suggesting that the compound could be glycosylated. From SDS-PAGE analysis, the antimicrobial compound had molecular weight of approximately less than 13.7 kDa. The antimicrobial activity of cell free supernatant was significantly increased with the addition of SDS, Triton x-100, Tween 80 and Tween 20. On the other hand, no change was observed in the antimicrobial activity with the addition of EDTA. **Conclusion.** It can be concluded that antimicrobial compound showed a proteinaceous nature with a low molecular weight and active against food poisoning bacteria (*L. monocytogenes*). Thus the compound may have potential use in the food industry.

Keyword: Antimicrobial; *Lactobacillus paracasei*; Fish fermented product.